

# Center for Research on Occupational and Environmental Toxicology



## NEWSLETTER

### *Inside*

*CROET/OR-OSHA Sponsor 2020 Symposium.....3*

*Aging Workforce Addressed in Joint CROET/PSU Symposium.....4*

*Ryan Olson Wins Award.....5*

*Young Workers Coalition at OMSI Public Health Week.....5*

*CROET Seminar Series.....6*

*Upcomming Conferences.....8*

### **Founding CROET Director Peter Spencer Takes Global Health Center Directorship**

*CROET Senior Scientist Stephen Lloyd Takes Helm as Interim CROET Director*

#### **A message from Dr. Spencer:**

There is a reason why a white marble human head sits astride a black plinth outside the Richard T. Jones building that houses CROET, courtesy of construction dollars provided by the Oregon Workers Benefit Fund. Such fine sculpture was made possible by Oregon's Percent for Art Legislation that sets aside "not less than 1% of the direct construction funds of new or remodeled state buildings with construction budgets of \$100,000 or greater for the acquisition of art work which may be an integral part of the building, attached thereto, or capable of display in other State Buildings". Distinguished Oregon artist Larry Kirkland, under guidance from the Oregon Arts Commission, created the striking marble head to capture the vision that CROET would initially focus on the role of the brain and behavior in workplace safety and occupational disease. The commission ran short of money for the arts project, so the original full head ordered from Italy arrived with half cut away to great effect because it exposed the space occupied by the brain.

The neuroscience focus of CROET meshed with the university's ambitions in this then-emerging area of biomedical



OREGON  
HEALTH & SCIENCE  
UNIVERSITY

research. When I arrived at OHSU with my colleagues 21 years ago, we brought a NIH program project grant on toxic probes of neurodegenerative disease; in later years, with an expanded faculty, we were fortunate to win three neuroscience-based center grants in which CROET scientists worked with colleagues across OHSU, the Portland VAMC, and other Pacific Northwest research institutions. Brain Awareness Week was conceived at CROET and nurtured by others into a celebrated annual Portland event. With grant successes by individual CROET faculty and with further faculty recruitment, the Center's research portfolio expanded beyond the brain and behavior to tackle other problems that compromise the health, safety and productivity of Oregon's workforce.

A key part of the expansion of CROET's portfolio and faculty was the recruitment of Dr. Stephen Lloyd, a leading expert on the mechanisms of DNA damage and repair following exposure to cancer-associated occupational and other chemicals.



Peter Spencer, PhD, FRCPATH

In addition to a large, nationally funded basic science laboratory, Dr. Lloyd had experience leading multidisciplinary research centers while at the University of Texas Medical Branch. CROET is fortunate to have this combination of scientific and administrative expertise in its newly appointed Interim Director and to have Dr. W. Kent Anger continue in the position of CROET Associate Director. Dr. Anger -- my first recruit to CROET some 20 years ago -- has with his staff played a major role in the Center's development and present standing, as have CROET's Assistant Directors Dr. Gregory Higgins and Janice Stewart, and Dr. Fred Berman, who heads CROET's Toxicology Information Center.

Under my former leadership, CROET engaged the creativity, energy and expertise of a diverse and international workforce, another part of the vision for CROET laid out for artist Larry Kirkland in 1988. His response was to position the marble half-head on a black plinth inscribed with images from human history and across diverse cultures that would serve as a point of contact and welcome for people of all nations. This resonated with my own research that took me to remote regions of the world to study little-known neurodegenerative diseases related to conditions found at home and that could be studied in detail in CROET laboratories. This experience led to my appointment in summer 2007 as interim director of the newly created OHSU Global Health Center (GHC) - since housed temporarily within the space behind Kirkland's marble statue - and the Oc-

tober 2009 transfer of my responsibilities from CROET Director to Director of the GHC.

From this new vantage point, the marble half-head statue reminds me of the hemi-inattention syndrome, a remarkable, stroke-related neuropsychological disorder in which the brain attends to only one side of the body and its environment. Patients have an intuitive knowledge that the other side of their world exists, but it has no meaningful reality in their daily lives. Patients with this type of brain-driven unilateral neglect syndrome actually have to turn around to see and appreciate the other side of their world. Humans across the globe suffer from hemi-inattention syndrome: each society is aware of others that exist, but this awareness has little or no impact on the conduct of people's lives. Now Kirkland's half head is a daily reminder of the need to treat our own hemi-inattention syndrome through two-way research, education, advocacy and service that promotes health and safety not only of Oregonians but also of people worldwide.

Peter S. Spencer, PhD, FRCPATH  
Global Health Center Director,  
CROET Senior Scientist,  
SOM Professor of Neurology.

### A message from Dr. Lloyd:

After more than 2 decades of service as the founding Director of the Center for Research on Occupational and Environmental Toxicology (CROET), Dr. Peter Spencer has accepted a new position as the Director of the Oregon Health & Science University (OHSU) Global Health Center, effective October, 2009. OHSU has made a commitment to initiate a national search for a new Director of CROET in January, 2010. During this time, I have agreed to assume the role of Interim Director with the primary objective being to maximize CROET's effectiveness in recruiting the best possible individual into the Director's position, an individual whose research program is directly germane to CROET's mission.



Stephen Lloyd, PhD

This time of transition will be characterized by a revitalized and expanded commitment to both OHSU and all Oregonians. Prior to this transition, I led CROET's Strategic Planning committee which proposed an evolution to an increased emphasis of CROET's research on intervention and intervention effectiveness. We have begun to increase CROET's visibility in our local community and across the state through actively seeking partnerships with other organizations whose mandates and missions are to serve all workers within the State. This will be the theme of CROET as



# Future of Workplace Health and Safety Assessed in Joint CROET/OR-OSHA Symposium

Keynote address presented by Dr. John Howard,  
Director of NIOSH

Wouldn't it be great to predict what the landscape of workplace health and safety will look like in the future? In September, CROET and Oregon OSHA pulled out the crystal ball and attempted to do just that by hosting the symposium, "Oregon's Workplace Health and Safety: Looking Forward to 2020" - and by all accounts, the effort was quite illuminating. The symposium brought together leaders from industry, government and labor, each of whom brought his or her own unique perspective to bear on questions related to the future of workplace health and safety in Oregon.

A particular highlight of the symposium was the participation of Dr. John Howard, Director of the National Institute for Occupational Safety and Health (NIOSH). In his keynote address, Dr. Howard identified several areas of change that are defining the future workplace health and safety landscape, including: the changing structure of the employment relationship; the changing demographics of the American workforce, including the growing population of "chronologically gifted" (aging) workers; the persistence of traditional workplace hazards; and emergent hazards arising with new technologies.

Labor laws are effective in protecting workers within the standard work setting, but Dr. Howard pointed out that more and more workers no longer fit into the traditional employment relationship. For example, day laborers, worker contractors, the self-employed, "flexible" or "precarious" labor arrangements, and decentralization of the workforce (e.g. eBay commerce); these employment arrangements place workers outside of traditional work relationships that are so effectively covered by U.S. labor law. Therefore, concluded Dr. Howard, new legal structures for occupational health and safety may need to be developed to cover these evolving employment relationships.

On the subject of demographics, Dr. Howard addressed the challenges to worker safety and health presented by an increasingly trans-cultural and chronologically gifted workforce. Language and culture can have a profound effect on workplace health and safety, both from a communication and implementation standpoint. Moreover, as rising healthcare costs and uncertain retirement funding force aging workers to extend their careers, we are seeing an

increase in "re-careering" and the need for reasonable accommodation for physical limitations.

Dr. Howard emphasized the need to develop an early risk recognition process that adequately defines the hazards of new materials and processes before workers and consumers are actually exposed to them. For example, in the evolving area of nanotechnology, the health and safety of workers handling nanomaterials may be at risk, because not much

is known about the hazards such materials present. Citing this example, Dr. Howard wondered whether current systems of risk assessment are really adequate to address newly emerging technologies.

Lunchtime work groups were another highlight of the symposium, where attendees could choose among four discussions under the theme "Cross-Cutting Issues for Oregon". Topics for discussion included: Workplace safety and health implications of the transition to



Dr. John Howard, NIOSH Director, delivers keynote address at the 2020 Conference

"green", facilitated by Karen Chase, Oregon Department of Energy; Lifestyle, non-traditional work schedules and work restructuring, facilitated by Dr. Ryan Olson, CROET; Refugees, immigrants and global health implications, facilitated by Dr. Diane Rohlman, CROET; and Aging populations and work, facilitated by Dr. Kent Anger, CROET. Session participants discussed many interesting issues and ideas, which generated a lot of excitement about the future Oregon workplace, according to facilitators' reports.

Overall, participants rated the symposium as excellent. CROET plans to revisit the great conversations and ideas that were generated as we set priorities for future research, educational events and outreach materials.

To learn more, you can experience the symposium yourself at <http://www.ohsu.edu/xd/research/centers-institutes/croet/outreach/health.cfm>. Here, you can view videos of the presentations of Dr. Howard, NIOSH Director; Dr. Peter Spencer, CROET Director; and Art Ayre, Oregon State Employment Economist. You can also view summaries of morning and afternoon panel discussions, summary documents from the lunchtime work groups, and view the roster of symposium panelists, speakers and conference organizers.

# Issues Facing an Aging Workforce Addressed in Joint CROET/PSU Symposium

The U.S. workforce is aging: in 1950, the median age of American workers was 28.8 years, whereas today it is 40.8, and will increase to 46.6 years by 2030, all of which presents a variety of challenges to U.S. workers and employers. To shed light on this ongoing demographic change, CROET and the Portland State University Occupational Health Psychology Program teamed up to host the symposium, “Managing the Aging Workforce: Implications for Workplace Stress, Health, Safety and Performance”. Four experts in the field provided conference attendees a variety of perspectives on the issue, as described below, followed by a panel and audience discussion, moderated by Donald Truxillo, PhD.

## *Work Stress & Health Issues for an Aging Workforce*

“Economic pressures are forcing many aging workers to delay retirement”, said Janet Barnes-Farrell, PhD, Professor of Psychology & Director of the Industrial Psychology Applications Center at the University of Connecticut’s Department of Psychology. Since most workplaces and jobs do not



Janet Barnes-Farrell addresses conference attendees.

take into consideration the capabilities, limitations, needs or preferences associated with a worker’s age, work stress can arise when a mismatch between the demands of the job and capabilities and resources of the worker occurs. Dr. Barnes-Farrell discussed the many adverse health factors associated with workplace stress in aging workers and how these problems can be avoided.

## *Changes in Workforce Demographics and the Future of Work and Retirement*

Jost Lottes, PhD, Director of the Senior Adult Learning Center at Portland State University, stressed that “no single trend will play a larger role in shaping the social, economic, and geopolitical order throughout the developed and developing world than global aging”. He presented statistics describing changes in workforce demographics, and said there are two forces behind the phenomenon of global aging: decreasing fertility rates and increasing longevity.

Dr. Lottes said that consequently, there will be fewer taxpayers to support each retired pensioner, which will have major effects on the ability of Social Security and Medicare to meet their obligations under current law.

## *Workplace Safety for the Aging Workforce*

Lynda Enos, RN, MS, COHN-S, CPE, Nursing Practice Consultant and Ergonomist with the Oregon Nurses Association, pointed out that older workers actually have fewer lost-time injuries than younger workers, but older workers who do experience lost-time injuries tend to suffer disability for a longer period than their younger counterparts. Moreover, the cost per lost-time workers compensation claim for workers aged 45-64 is more than twice that of workers aged 20-24. Falls alone account for more than one-third of all injuries among workers 65 and older. However, said Ms. Enos, the experience, quality and learned efficiencies of older workers may actually make them more productive than younger workers. She also discussed the physical and cognitive changes older workers face as they age and the affect this can have on worker health and safety.

## *Age and Work Performance: Myths and Realities*

Donald Truxillo, Ph.D., Professor of Psychology in the Occupational Health Psychology Program at Portland State University, discussed many of the stereotypes related to the older worker. The realities, however, are very different and more complex than the stereotypes, said Dr. Truxillo. Older worker stereotypes influence employment decisions related to hiring and performance ratings, and may adversely alter the motivation and performance of those affected. This could have legal implications for employers if stereotyping leads to charges of discrimination.

During the panel discussion, an interesting theme emerged regarding the advantages offered organizations that thoughtfully design diverse work teams, including age diversity. The subtle differences that can exist between differently aged workers can lead to team strengths when



Lynda Enos, Donald Truxillo and Janet Barnes-Farrell lead the panel discussion.

such diversity is honored in a working environment.

You can learn more about this conference and obtain copies of the four speaker’s presentations by visiting <http://www.ohsu.edu/xd/research/centers-institutes/croet/outreach/health.cfm>



## Ryan Olson Awarded First Place in Best Practices Competition

Ryan Olson has won a prestigious award for research he presented at the 8th International Conference on Occupational Stress and Health in San Juan, Puerto Rico, November 5-8, 2009. Dr. Olson's presentation, titled "A new health promotion model for truck drivers: Results of the SHIFT pilot study", was awarded first place in the "Best Practices Interventions Competition". The purpose of the competition is to recognize outstanding evaluations of "best practices interventions" that partner researchers with industry and labor to prevent occupational injuries and illnesses, and to promote safety and health at work.

Dr. Olson's SHIFT (Safety and Health Involvement for Truck Drivers) study was a six-month pilot project that examined the effectiveness of an educational program and team competition to improve truckers' diets, exercise and safety practices. This research was highlighted in CROET Newsletter Vol. 15, No. 1, 2007. Drivers competed in teams and received computer-based training, self-management activities, and individualized coaching to achieve the greatest improvements in health and safety measures. Under

this program, truckers reduced their dietary fat and sugar consumption and lost an average of 7.8 lbs body weight. Driving safety also showed significant improvement.

The International Conference on Occupational Stress and Health was co-sponsored by the American Psychological Association, the National Institute for Occupational Safety and Health, the Society for Occupational Health Psychology and the University of Puerto Rico. Its purpose is to address the constantly changing nature of work and the implications of these changes for the health, safety, and well being of workers. This year's conference highlighted work, stress, and health as a subject of global concern affecting developed and developing countries alike. Numerous topics of interest to labor, management, practitioners, and researchers were covered, including work and family issues, workplace violence, long hours of work, the aging workforce, and best practices for preventing stress and improving the health of workers and their organizations.

For more information about Dr. Olson's research, visit <http://www.ohsu.edu/xd/research/centers-institutes/croet/research/>



Dr. Ryan Olson

## Young Workers Coalition at OMSI Public Health Week

The Oregon Young Worker Health and Safety Coalition joined other organizations at Public Health Week at OMSI from August 10-15, 2009 in Portland. Visitors to the Coalition's Exhibit were introduced to SAIF Corporation's "Dezi Bell" and learned about music-induced hearing loss and the safe use of iPods and other music listening devices. Younger visitors particularly enjoyed learning about noise sources with OHSU's Dangerous Decibels' "How Loud is Loud" exhibit. Parents and grandparents learned about how to set maximum volume levels on portable music players and shared stories about their own hearing losses. All visitors gained a pair of earplugs and information about proper use of hearing protection. See the photos below!



"Dezi Bell"



CROET's Dede Montgomery, Oregon Young Worker Health and Safety Coalition member, works the crowd during Public Health Week at OMSI

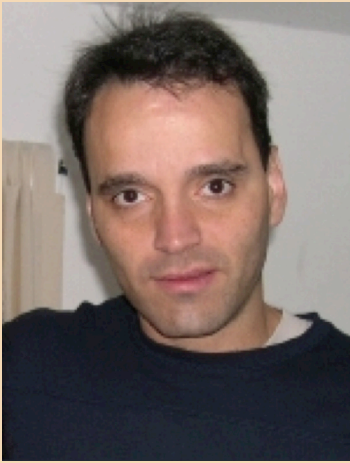


# CROET Seminar Series: Circadian Rhythms Draw Wide Circle of Interest

Contributed by Terry Hammond

Rats are different than mice, according to a mouse narrator in a recent cartoon, because rats can't talk. In the real world, according to Dr. Horacio de la Iglesia in his scientific presentation at CROET on December 7, rats are also different than mice in the laboratory. The circadian rhythms of rats can be desynchronized to study effects on cellular function and behavior, whereas the circadian rhythms of mice remain stubbornly constant, making them poor research subjects.

Invited by CROET Senior Scientist Dr. Charles Allen, Dr. de la Iglesia came to OHSU from the University of Washington to give his presentation, "Breaking the rhythm of the circadian orchestra by desynchronizing neuronal oscillators".



Dr. de la Iglesia exchanged ideas with other scientists conducting research related to circadian rhythms, including Dr. Allen, and Drs. Bruce Patton and Doris Kretzschmar (CROET), Henryk Urbanski (Oregon National Primate Center), Alfred Lewy (OHSU Department of Psychiatry), Jonathan Emens (OHSU Department of Psychiatry, Sleep Disorders Medicine and Research), and Patrick Chappell (College of Veterinary Medicine, OSU).

The circadian rhythms of the suprachiasmatic nucleus (SCN), an area of the brain that controls sleep and awake cycles, interest a wide array of researchers. The clear effect of environmental light on localized cellular functions, and its direct effect on neuronal communication and behavior makes the SCN useful as a model for cellular research in other areas of biology. Dr. Chappell from OSU credits insights from the field of circadian biology in his work on hormone cycles.

Dr. Allen explained that the SCN is like a master clock that coordinates all other clocks in the body. Specifically how it does that is Dr. Allen's interest. Dr. de la Iglesia's work is important to him, because the manipulation of the light/dark cycle to change SCN function and behavior "allows us to evaluate how that is accomplished."

The newest member of the team in Dr. Allen's lab, Research Assistant Michelle Sorensen, described the work there as "fantastic, love it, because we get to do all kinds of science in here" – including molecular and cellular biology, animal work, behavior testing, and at this particular

moment, conducting experiments on organotypic cultures. The lab also includes Senior Investigator Robert Irwin MD, and Postdoctoral Fellow Misha Moldavan.

The CROET scientific seminars provide an opportunity for CROET and other faculty at OHSU to invite speakers they may wish to meet. A small stipend and travel reimbursements make the journey for visiting scientists possible. Dr. Allen describes the seminars as a great resource, first by allowing contact with the speaker, but also to draw together other local people in the same field that may produce useful collaborations.

Currently, CROET sponsors about one seminar per month. For a schedule of CROET seminars, please visit [www.ohsu.edu/croet](http://www.ohsu.edu/croet) and click on the Outreach & Education link.

## Director

(Continued from Page 1)

we recruit a new Director and plan the hiring of new faculty to implement our strategic plan.

I am privileged that Dr. Kent Anger will continue to serve as the Associate Director of CROET and as such, he will continue to lead an expansion of CROET's outreach program which, together with CROET's applied and intervention research faculty, will continue to find ways to increase our impact at the Oregon Worksite.

I appreciate the opportunity to lead CROET during this transition period. Having served as the Director of two Centers in Environmental Health and Medicine at the University of Texas Medical Branch prior to coming to OHSU and having served as the Chair of both the CROET Strategic Planning Committee and Budget Committee, I have an appreciation of the task and potential ahead.

I want to extend CROET's and OHSU's appreciation to Dr. Spencer. As OHSU moves toward greater commitments to address the challenges facing global health issues, OHSU President, Dr. Joe Robertson selected Dr. Spencer to lead the university's efforts in this area based on Dr. Spencer's ongoing interest and expertise in this arena. All of us who have the privilege of working in CROET are very grateful for Dr. Spencer's leadership. He played an integral role in laying the founding principles from which CROET has grown, and his vision and implementation of research, outreach and education. Dr. Spencer will maintain his association with CROET while he takes on this new leadership role in building OHSU's global health initiatives.

As we begin this new chapter for CROET, I look forward to renewing and deepening our commitments and contributions to worker health and safety with the help and support of the CROET faculty and staff.

R. Stephen Lloyd, PhD



# Center for Research on Occupational and Environmental Toxicology

CROET, the Center for Research on Occupational and Environmental Toxicology at Oregon Health & Science University, conducts research, provides consultations and offers information on hazardous chemicals and their health effects. CROET's scientists and research staff explore a range of questions relating to health and the prevention of injury and disease in the workforce of Oregon and beyond. CROET's Toxicology Information Center is open to the public and is staffed to answer Oregonians' questions about hazardous substances in the workplace and elsewhere. CROET's Web site also provides answers to questions about industries found in Oregon through links on a series of pages devoted to industry-specific topics.

## How to Contact Us

### MAIL ADDRESS

CROET  
Oregon Health & Science University  
3181 SW Sam Jackson Park Rd, L606  
Portland, OR 97239-3098

### Web site

<http://www.ohsu.edu/croet/>

### TELEPHONE

Main CROET number  
(503) 494-4273  
Facsimile  
(503) 494-4278  
Toxicology Information Center  
(800) 457-8627

### E-MAIL

Toxicology Information Center  
[croettic@ohsu.edu](mailto:croettic@ohsu.edu)

You may share your comments regarding this publication by calling **(503) 494-2512**, by e-mailing us at [croetweb@ohsu.edu](mailto:croetweb@ohsu.edu) or by faxing us at (503) 494-4278

### DIRECTORS AND SCIENTISTS

#### INTERIM DIRECTOR AND SENIOR SCIENTIST

R. Stephen Lloyd, PhD

#### ASSOCIATE DIRECTOR AND SENIOR SCIENTIST

W. Kent Anger, PhD

#### ASSISTANT DIRECTORS

Gregory Higgins, PhD  
Janice Stewart, BS

#### FACULTY

Charles Allen, PhD  
W. Kent Anger, PhD  
Gregory Higgins, PhD  
Glen Kisby, PhD  
Doris Kretzschmar, PhD  
R. Stephen Lloyd, PhD  
Amanda McCullough, PhD  
Irina Minko, PhD  
Harvey Mohrenweiser, PhD  
Ryan Olson, PhD  
Bruce Patton, PhD  
D. Gary Rischitelli, MD, JD, MPH, FACOEM  
Diane Rohlman, PhD  
Jackilen Shannon, MPH, RD, PhD  
Show-Ling Shyng, PhD  
Peter Spencer, PhD, FRCPath  
Philippe Thuillier, PhD  
Daniel D. Tshala-Katumbay, MD, PhD  
Mitchell Turker, PhD, JD  
Feifei Yan, PhD

#### INVESTIGATORS

Robert Irwin, MD, MPH  
Elena Herrero-Hernandez, MD, PhD  
Mohammad Sabri, PhD (Emeritus)

#### SCIENTIFIC STAFF

Daniel Austin, MS  
Frederick Berman, DVM, PhD  
Bonnie Bolkin, PhD  
Cathrin Bruederle, PhD  
Pei-Chun Chen, PhD  
Adam Clore, PhD  
Paige Farris, MSW  
Terry Hammond, MPH  
Jodi Johnson, PhD  
Roman Kassa, PhD  
Anuradha Kumari, PhD  
Mike Lasarev, MS  
Mykhaylo Moldavan, PhD  
Dede Montgomery, MS, CIH  
Amy Palma, RD  
Valerie Palmer, BS  
Olga Ryabinina, MS  
Harini Sampath, PhD  
Vladimir Vartanian, PhD  
Bradley Wipfli, PhD  
Qing Zhou, PhD  
Erika Zoller, MPH

# OUTREACH

## **Cascade Occupational Safety & Health Conference**

Lane Community College, Eugene, Oregon  
March 9 & 10, 2010

## **2010 Women in Trades Career Fair**

NECA/IBEW Electrical Training Center - Portland, Oregon  
April 29 - May 1, 2010

## **Blue Mountain Occupational Safety & Health Conference**

Blue Mountain Conference Center - LaGrande, Oregon  
June 2010

## **Central Oregon Occupational Safety & Health Conference**

Eagle Crest Resort - Redmond, Oregon  
September 2010

## **Oregon Small Business Fair**

Oregon Convention Center - Portland, Oregon  
September 2010

## Join our monthly E-mail list

Join CROET's e-mail list for monthly updates about additions to the CROET web site, news and upcoming events. To subscribe or read past updates, go to <http://www.croetweb.com/newslet.cfm>.

Oregon Health & Science University includes the Schools of Dentistry, Medicine and Nursing; OHSU Hospital; numerous primary care and specialty clinics; multiple research institutes and several outreach and public service units. OHSU is an equal opportunity, affirmative action institution.

Oregon Health & Science University  
CROET, the Center for Research on  
Occupational and Environmental Toxicology  
3181 SW Sam Jackson Park Rd., L606  
Portland, OR 97239-3098



Non-Profit Org.  
U.S. Postage  
PAID  
Permit No. 722  
Portland, OR